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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,925	03/12/2001	Ermanno Filippi	Q63473	7234

7590

03/09/2006

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EXAMINER
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BHAT, NINA NMN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/802,925

Applicant(s)

FILIPPI, ERMANNO

Examiner

N. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application:
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's arguments of 12-16-2005 have been fully and carefully considered.

Applicant's argument regarding the Vittori reference is persuasive. A new ground of rejection follows:

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 4, 7,8 and 9 rejected under 35 U.S.C. 102(b) as being anticipated by Le Blanc USP 5, 001, 625.

Le Blanc teaches a process for obtaining a heating fluid to be used in an indirect heat source for carrying out endothermic reactions comprising the steps of feeding a flow of hydrocarbons and oxygen to a combustor, and burning the hydrocarbons in the presence of the oxygen obtaining a high temperature fluid which is then used in an exchange reformer for carrying out the endothermic reactions. Specifically LeBlanc teach a saturated hydrocarbon feed or a feed hydrocarbon and water vapor stream is added to the combustor or hydrocarbon, steam and oxidant is mixed and combusted to form a high temperature fluid comprising carbon dioxide and oxygen.[Note Column 3, lines 65 to Column 4, lines 1-28 and Claim 1] The process as described in Le Blanc fully anticipates applicant's process.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 2, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Le Blanc. USP 5,011,625

Le Blanc teaches the invention substantially as claimed.

However, Le Blanc does not specifically that the amount of water to oxygen ratio as claimed by applicant nor that the water is added upstream of the combustor.

Le Blanc teaches a process of or autothermal steam reforming, the process as described provides a heating fluid to be used as an indirect heat source of carrying out endothermic reactions. The process include feed an flow of hydrocarbons and a gas flow comprising oxygen to a combustor burning the hydrocarbons in the presence of oxygen and obtaining a high temperature fluid comprising carbon dioxide and oxygen.

Le Blanc further teaches the step of feeding a flow of water to the high temperature fluid or combustor by way of adding steam, or water vapor or a saturated hydrocarbon, which is added to the combustor. Le Blanc teaches that the fresh hydrocarbon feed in line (1)

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is saturated with water and combined with steam in line (2) and preheated in feed/effluent heat exchanged, a major portion of the hydrocarbon feed in line (4) is combined with addition steam and oxidant introduced in lines (5 and 6) which is then mixed and feed into the combustor. Le Blanc teaches that the water is heated upstream of the combustor but does not specifically recite the pressure. It would have been obvious from the teachings of Le Blanc to add water or steam or water vapor to the combustor in order to provide a heating fluid, which is used as an indirect heat source for carrying out endothermic reactions, this concept has been fully taught by Le Blanc. To add water in an amount to satisfy applicant's water to oxidant ratio would have been an obvious design choice to having ordinary skill in the art of reforming. The amount of saturated hydrocarbon or the heating fluid having heat sufficient enough to drive the endothermic reactions is based on heat and mass exchange taking place in the reactor. The amount of heat required for autothermal reforming is well known and to manipulate the reactant amounts and water such as claimed by applicant based on the reaction conditions and reactor design is within the ordinary purview of the artisan familiar with reforming. Thus applicant's invention as a whole is rendered obvious by the teachings of Le Blanc.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Duderer teach catalyst steam reforming of hydrocarbons. Barnhart teach a method of manufacturing reducing gas useful in a direct reduction process.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



N. Bhat  
Primary Examiner  
Art Unit 1764